

WHAT IS CLAIMED:

1. A curable powder coating composition comprising:
a. a polymer containing reactive functional groups;
b. a curing agent having functional groups reactive with the
functional groups of the polymer which is present in an amount sufficient to
cure the polymer; and
c. a phenolic compound having substituted groups on the
two groups adjacent to the hydroxy group on the aromatic ring.
2. The powder coating composition of claim 1 wherein the
substituted groups are alkyl groups or branched alkyl groups.
3. The powder coating composition of claim 2 wherein the alkyl
group contains from 1 to 18 carbon atoms.
4. The powder coating composition of claim 1 wherein said
phenolic compound is 2,6 di-tert-butyl-4-methyl-phenol.
5. The powder coating composition of claim 1 wherein said
polymer containing reactive functional groups is selected from the group
consisting of acrylic polymers, polyester polymers, and polyurethane
polymers.
6. The powder coating composition of claim 1 wherein said
polymer has a number average molecular weight of from 1,000 to 20,000.
7. The powder coating composition of claim 1 wherein said
polymer has an equivalent weight equal from 200 to 2,500.

8. The powder coating composition of claim 1 wherein said reactive functional groups are carboxylic acid groups and the curing agent is a beta-hydroxyalkylamide.

5 8. The powder coating composition of claim 8 wherein the beta-hydroxyalkylamide is bis-hydroxyethylamide.

10 10. The powder coating composition of claim 1 wherein said reactive functional groups are carboxylic acid groups and the curing agent is a polyepoxide.

11. The powder coating composition of claim 10 wherein said curing agent is triglycidylisocyanurate.

15 12. The powder coating composition of claim 1 wherein said phenolic compound is present in an amount ranging from 0.5 to 10 weight percent based on the total weight resin solids in the powder coating composition.

20 13. The powder coating composition of claim 1 wherein said polymer is present in an amount ranging from 10 to 80 weight percent based on the total weight resin solids in the powder coating composition.

25 14. The powder coating composition of claim 1 wherein said curing agent is present in an amount ranging from 2 to 40 weight percent based on the total weight resin solids in the powder coating composition.

15. The powder coating composition of claim 1 where said polymer is an acrylic polymer containing carboxylic acid functionality.

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- A curable powder coating composition comprising:
- an acrylic polymer containing carboxylic acid functional groups;
 - a beta-hydroxyalkylamide curing agent; and
 - 2,6 di-tert-butyl-4-methyl-phenol.
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- A curable powder coating composition comprising:
- from 5 to 60 weight percent of an acrylic polymer containing carboxylic acid functional groups;
 - from 0.5 to 10 percent by weight of a beta-hydroxyalkylamide curing agent and
 - from 2 to 40 weight percent of 2,6 di-tert-butyl-4-methyl-phenol, wherein the percent by weight is based on total resin solids weight of the powder coating composition,
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- A coated aluminum substrate containing a cured coating comprising:
- a polymer containing reactive functional groups;
 - a curing agent having functional groups reactive with the functional groups of the polymer which is present in an amount sufficient to cure the polymer; and
 - a phenolic compound having substituted-groups on the two groups adjacent to the hydroxy group on the aromatic ring.
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